

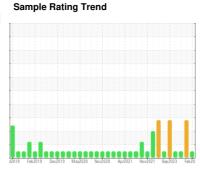
# **OIL ANALYSIS REPORT**

# (EMN864) **AUTOCAR 10854**

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (7 GAL)





### DIAGNOSIS

### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

All component wear rates are normal.

### Contamination

Fuel content negligible. There is no indication of any contamination in the oil.

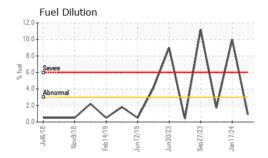
### **Fluid Condition**

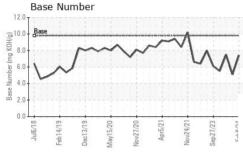
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

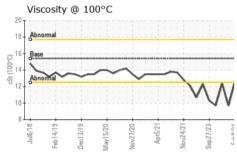
SAMPLE INFORI	MOLT A M	method	limit/base	Clurront	history1	history2
	WATION		— IIIIII/base	current	history1	•
Sample Number		Client Info		GFL0109077	GFL0109091	GFL0109099
Sample Date		Client Info		08 Feb 2024	17 Jan 2024	11 Jan 2024
Machine Age	hrs	Client Info		4131	4030	4005
Oil Age	hrs	Client Info		0	0	4005
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	SEVERE	NORMAL
CONTAMINAT	ION	method	limit/base	current	history1	history2
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
WEAR METAL	S	method	limit/base	current	history1	history2
						9
Iron	ppm	ASTM D5185m	>75	10	18	
Chromium	ppm	ASTM D5185m		<1	1	<1
Nickel	ppm	ASTM D5185m	>4	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m		6	4	2
Lead	ppm	ASTM D5185m	>25	0	0	<1
Copper	ppm		>100	<1	1	5
Tin	ppm	ASTM D5185m	>4	0	0	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVEO						history2
ADDITIVES		method	limit/base	current	history1	HISTORYZ
Boron	ppm	ASTM D5185m	0	current 14	9	19
	ppm					
Boron		ASTM D5185m	0	14	9	19
Boron Barium	ppm	ASTM D5185m ASTM D5185m	0	14 9	9	19 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60	14 9 60	9 0 50	19 0 59
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0	14 9 60 0	9 0 50	19 0 59 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010	14 9 60 0 698	9 0 50 0 599	19 0 59 <1 743
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070	14 9 60 0 698 1036	9 0 50 0 599 936	19 0 59 <1 743 1069
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150	14 9 60 0 698 1036 796	9 0 50 0 599 936 749	19 0 59 <1 743 1069 960
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270	14 9 60 0 698 1036 796	9 0 50 0 599 936 749 911	19 0 59 <1 743 1069 960 1123
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	14 9 60 0 698 1036 796 1047 2554	9 0 50 0 599 936 749 911 2358	19 0 59 <1 743 1069 960 1123 2795
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	14 9 60 0 698 1036 796 1047 2554 current	9 0 50 0 599 936 749 911 2358	19 0 59 <1 743 1069 960 1123 2795
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060	14 9 60 0 698 1036 796 1047 2554 current	9 0 50 0 599 936 749 911 2358 history1	19 0 59 <1 743 1069 960 1123 2795 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	14 9 60 0 698 1036 796 1047 2554 current 3	9 0 50 0 599 936 749 911 2358 history1	19 0 59 <1 743 1069 960 1123 2795 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25	14 9 60 0 698 1036 796 1047 2554 current 3 0 16	9 0 50 0 599 936 749 911 2358 history1 8 4 3	19 0 59 <1 743 1069 960 1123 2795 history2 3 6 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED	ppm	ASTM D5185m	0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 >3.0	14 9 60 0 698 1036 796 1047 2554 current 3 0 16 0.9	9 0 50 0 599 936 749 911 2358 history1 8 4 3	19 0 59 <1 743 1069 960 1123 2795 history2 3 6 2 <1.0
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm	ASTM D5185m	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0	14 9 60 0 698 1036 796 1047 2554 current 3 0 16 0.9 current	9 0 50 0 599 936 749 911 2358 history1 8 4 3 10.0 history1 0.7	19 0 59 <1 743 1069 960 1123 2795 history2 3 6 2 <1.0 history2 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	14 9 60 0 698 1036 796 1047 2554  current 3 0 16 0.9  current 0.3 7.0	9 0 50 0 599 936 749 911 2358 history1 8 4 3 10.0 history1 0.7 10.5	19 0 59 <1 743 1069 960 1123 2795 history2 3 6 2 <1.0 history2 0.4 6.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur  CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20 >30	14 9 60 0 698 1036 796 1047 2554 current 3 0 16 0.9 current 0.3 7.0 18.1	9 0 50 0 599 936 749 911 2358 history1 8 4 3 10.0 history1 0.7 10.5 20.4	19 0 59 <1 743 1069 960 1123 2795 history2 3 6 2 <1.0 history2 0.4 6.6 17.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm	ASTM D5185m  Method  ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D7824  *ASTM D7844  *ASTM D7844  *ASTM D7844  *ASTM D7844  *ASTM D7844	0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base	14 9 60 0 698 1036 796 1047 2554 current 3 0 16 0.9 current 0.3 7.0 18.1	9 0 50 0 599 936 749 911 2358 history1 8 4 3 • 10.0 history1 0.7 10.5 20.4 history1	19 0 59 <1 743 1069 960 1123 2795 history2 3 6 2 <1.0 history2 0.4 6.6 17.6 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7624	0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >6 >20 >30	14 9 60 0 698 1036 796 1047 2554 current 3 0 16 0.9 current 0.3 7.0 18.1	9 0 50 0 599 936 749 911 2358 history1 8 4 3 10.0 history1 0.7 10.5 20.4	19 0 59 <1 743 1069 960 1123 2795 history2 3 6 2 <1.0 history2 0.4 6.6 17.6

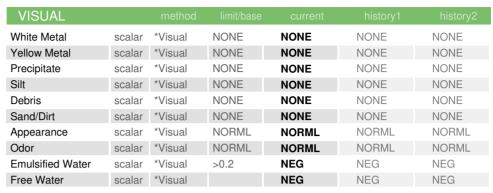


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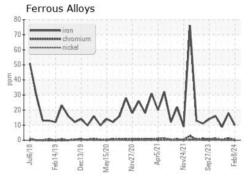


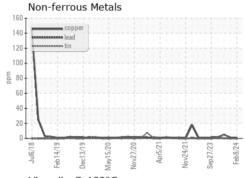


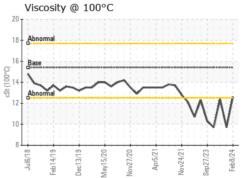


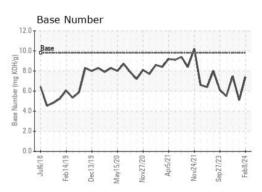
FLUID PROPERTIES		method				history2
Visc @ 100°C	cSt	ASTM D445	15.4	12.6	9.7	12.4

## **GRAPHS**













Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Lab Number : 06088473

: GFL0109077 **Unique Number** : 10875918

Received **Tested** Diagnosed

: 15 Feb 2024 Test Package: FLEET (Additional Tests: PercentFuel)

: 14 Feb 2024

: 15 Feb 2024 - Wes Davis

6905 Roosevelt Hwy Fairburn, GA US 30213

GFL Environmental - 009 - Fairburn

Contact: Eric Jones erjones@gflenv.com T: (678)630-9927

To discuss this sample report, contact Customer Service at 1-800-237-1369. \* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)